

10/01/2007


1065604 - R8 SDMS

RECEIVED

OCT 11 2007

Office of Enforcement
Compliance & Environmental
Justice

September 2007 RCRA Consent Decree Progress Report

INL PRB Testing Update - September 2007

October 1, 2007

Progress for September, 2007
Asarco PRB, Helena

Autonomous data collection continued through the month of September. Figure 1 below compares three-dimensional (3-D) views of resistivity as percent change from background for data sets collected on August 29 and September 13. Note that the largest blue region in the upper portion of the figure indicates the upper portion of the permeable reactive barrier (PRB). There appears to be little change within the barrier itself but substantial changes in resistivity in the background around the barrier. The changes probably reflect background changes in the water table and solute concentrations. The most notable changes are increases in resistivity (yellow to red) in the shallow portion of the image and decreases in the resistivity (blue) at depth.

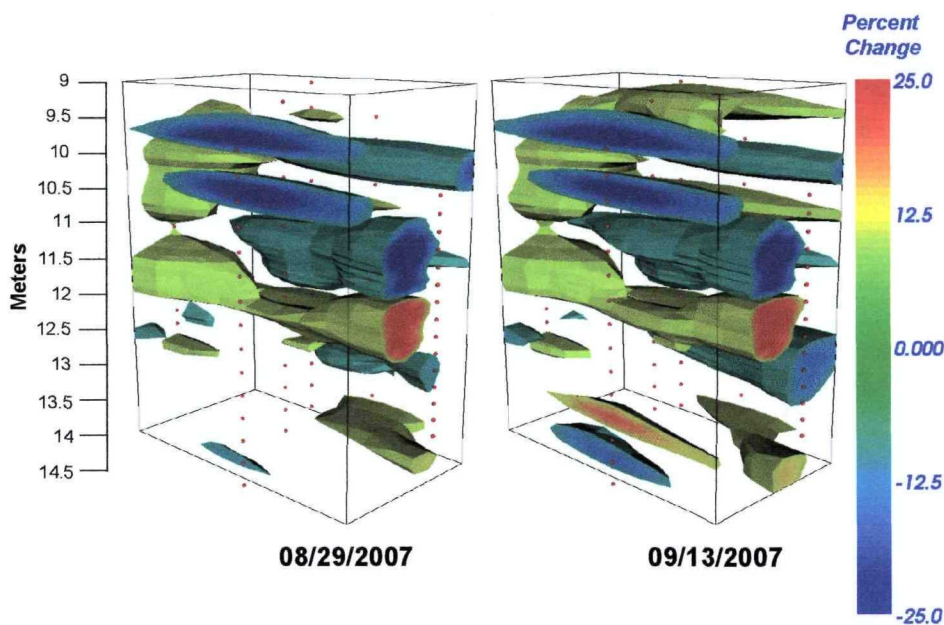


Figure 1. Images of percent change in intrinsic resistivity of the East Helena Barrier from background to August 29 (left) and September 13 (right).

Figure 2 shows induced-polarization chargeability images for 1 Hz data for August 29 and September 13, 2007. The large blue area at the top of the August 29 image shows the decrease chargeability of the upper portion of the barrier from the background values collect last year. Similar decreases have been observed at other barriers and are considered a relatively normal part of barrier aging. The “holes” within the anomalous area in the September 13 image indicate that the barrier chargeability has

increase during the last few weeks and is approaching that of the background levels. The reason for this increase is not clear. Such a large change is more likely to indicate large changes either in background water conductivity or a large drop in the water table than large changes within the barrier itself.

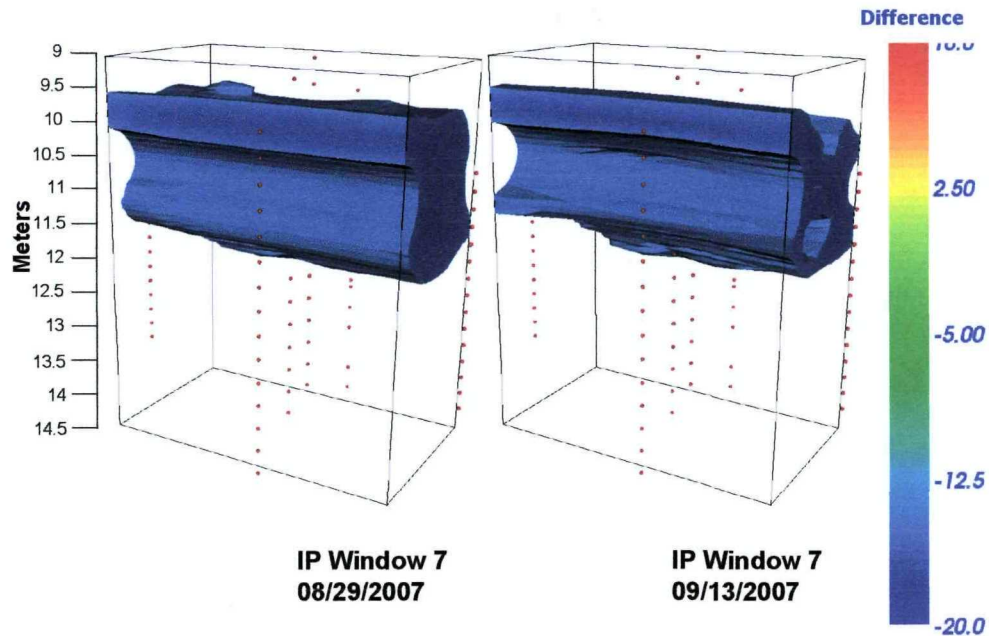


Figure 2. Images of change in intrinsic chargeability of the East Helena Barrier from background to August 29 (left) and September 13 (right).